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ABSTRACT

This report concerns a project to analyze available materials and design and develop supplementary ones to prepare students in grades 7-12 to cope with medical emergencies in natural, technological, and national disasters. Section 1 defines the project. Section 2 summarizes conclusions of the analysis phase, which focused on three sets of materials: Medical Self-Help Training, the American Red Cross Standard First Aid Personal Safety book, and "Your Chance to Live." It describes the resulting five-section curriculum design: general requirements for a casualty prevention and care instructional program, program goals and curricular objectives, selection and organization of instructional content, selection and organization of learning experiences, and an evaluation plan. Section 3 discusses the four project phases of analysis, design, and development; materials development; materials revision and reproduction; and field testing. Findings of pilot and field testing are reported in section 4. Section 5 describes the project's products--a student manual and accompanying teacher's guide. Objective and summaries are provided for each of the ten chapters in the student manual. Illustrations, cover design, and story structure are discussed. The format of the teacher's manual is also described. Recommendations in section 6 focus on curriculum delivery system, dissemination/diffusion program, teacher orientation/training program, and revision and further development. (YLB)

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Casualty Care
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"YOUR CHANCE TO HELP"

CASUALTY PREVENTION AND CARE MATERIALS
MEDICAL SUPPLEMENT TO "YOUR CHANCE TO LIVE"

STUDENT MANUAL: SM 3-12-B 1976
TEACHER MANUAL: IG 3-12-B 1976

FAR WEST LABORATORY ARCHIVES
1855 Folsom St., San Francisco, 94103

[FINAL REPORT]

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by

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Washington, D.C. 20301

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Casualty Care

OE 026 186

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FINAL REPORT

YOUR CHANCE TO HELP

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SECTION I. A DEFINITION OF THE PROJECT

Problem and Purpose

Educating and preparing youth and adults for survival in time of natural, technological, or national disaster is of the highest priority and is a task of immense proportions. The Defense Civil Preparedness Agency (DCPA) attends to this priority and is continuously engaged in the task of educating, and improving the level of preparation of, the citizenry of the United States.

The preparation of the Your Chance to Live manuals was a major step toward providing improved education for young people in disaster training. It was recognized however, that an educational program similar to Your Chance to Live was needed in the area of medical self-help for young people. Based on findings of a dissemination study,[1] it appeared that training materials currently available in this curriculum area were not adequate for application in schools.

The intent of Far West Laboratory for Educational Research and Development (FWL) was, therefore, to analyze available materials, and to design and develop supplementary ones that would prepare young people to cope with medical emergencies which might occur in natural, technological and national disasters. These materials would enable students in grades 7 - 12 and their families to survive in such emergencies when the services of a physician or other health care personnel were not readily available.

Scope of Work

The general scope of work was to provide the personnel, facilities, and other services necessary to produce "camera ready" student and teacher materials which would supplement the Defense Civil Preparedness Agency-Far West Laboratory publication Your Chance to Live.

In terms of specific work and services the project was to:

(1) analyze the content of Your Chance to Live and the Medical Self-Help Course and make a parallel analysis of the Standard First Aid and Personal Safety book issued by the American Red Cross as an element of control and coverage;

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[1] Altman, Tamara C., and Linda A. Sikorski. A Study of SM 3-12, "Your Chance to Live," Final Report, January, 1975, AAHC 20-73-C-0259 work unit 4431F, Far West Laboratory.

(2) provide the Government with a written report which described findings of the analysis, made recommendations regarding the Medical Self-Help lessons that would best and most logically supplement the lessons in Your Chance to Live, and recommended the general organization and content of the proposed supplement;

(3) work closely with the American Red Cross to develop materials and, on the basis of the approved analysis, prepare a teacher manual and a student manual with appropriate artwork and illustrations, and examinations, if any, in a pattern similar to that of Your Chance to Live and within school grade reading levels 7 through 12; in addition to facilitating the acquisition of casualty prevention and care knowledge at the familiarization level, such materials should include at least one chapter or lesson dealing with the possibility of nuclear attack, radiation hazards, and the handling of related casualties on an individual or family first aid basis;

(4) work through the American National Red Cross headquarters' staff to have draft materials technically reviewed and approved by the appropriate components of the National Academy of Science;

(5) field test the draft materials in at least one urban, one suburban, and one rural school and subsequently make the editorial and methodological changes indicated as needed by the tests;

(6) provide the Government with documentation of project progress in terms of three (3) bi-monthly reports and a final summary report describing field test findings, problems encountered, and recommendations for future work in similar areas;

(7) provide the Government with one (1) "camera ready" copy, one (1) layout dummy copy, and two (2) duplicates of the teacher manual, student manual, finished artwork and illustrations, and examinations, if any; the student manual should consist of 100 pages, 10 chapters, 75 sketches; the teacher manual should be keyed to the student manual so that it would allow teachers with little learning experience in the content area to coordinate learning experiences.

Project Phases: Objectives and Component Tasks

Chronologically, the major phases designed to achieve the above project goals were: 1) analysis, design, and early development, 2) materials development, 3) materials revision and reproduction, 4) field testing, and 5) data analysis and reporting.

SECTION II. ANALYSIS AND CURRICULUM DESIGN

Analysis of Existing Materials

The analysis phase of the project focused on three sets of materials: Medical Self-Help Training (MSH), the American Red Cross Standard First Aid and Personal Safety book (SFAPS), and Your Chance to Live (YCL).[2] Conclusions, submitted to DCPA in a twenty-four page report,[3] are summarized below.

MSH is designed for use by relatively untrained instructors in various settings from public school classes to community service groups. An instructor guide assumes no teacher training and gives specific basic suggestions for presentation of the material. The purpose of MSH is what to do when professional care is unavailable for an extended period of time.

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[2] Also referred to in the initial analysis was a Far West Laboratory report made in January, 1975, of the dissemination study of Your Chance to Live. (see footnote p.1 of this report.) A major finding of that study which had an important effect on the development of this project was "...the wide-spread desire for first-aid instructional materials as a part of the general preparedness curriculum." The study concluded that, "Based on the frequent requests for information and materials we experienced in the field, we recommend that comprehensive materials be provided; teachers seem ready and willing to use them". The study also recommended that the information for students be specific and that instructional guides for teachers be included. Specific teacher requests included:

> detailed methods of incorporating the material into specific curriculum areas;
> teacher aids,
> lesson plans;
> activity handouts;
> attention to the need to overcome initial student apathy toward preparedness instruction;
> actual accounts of personal experiences in disaster situations; and,
> attention to the value of relating the experiences to the students' personal lives.

[3] Far West Laboratory for Educational Research and Development, A Content Analysis of "Your Chance to Live," "Medical Self-Help Training," and "Standard First Aid and Personal Safety".

MSH is a boxed set of materials including eleven separate booklets with corresponding filmstrips and teacher materials. Neither the booklets nor the teacher materials is illustrated. In the filmstrips all people are white and most are male.

Practice sessions are recommended and evaluation is provided by a final comprehensive test of 60 multiple-choice questions covering application as well as knowledge. The reading ability level is fairly high; the writing is in the expository mode.

SFAPS is designed to be read by the general public or to be used in classes led by Red Cross trained teachers. The purpose of SFAPS is: first aid training, i.e. the immediate care given to a person who has been injured or has been suddenly taken ill.

Of the three sets of materials, SFAPS is the most comprehensive. Illustrations are an integral part of the presentation; they are clearly and simply drawn. Most of the people are white and male, though there are a few black men and women and several white women.

The reading ability level is geared to the general public. The book presupposes that the learner is motivated to learn first aid. Provision for practice sessions and evaluation are made in a separate instructor's manual for use by Red Cross trained teachers.

YCL is designed for use in the public schools and includes two separate manuals, one for students and one for teachers. The purpose of YCL is: to prepare students for handling disasters (rather than for handling first aid or medical self-help.) Unlike the other two sets of materials, therefore, YCL does not deal with medical emergencies (with the exception of very rudimentary discussions of heat-related problems). YCL presupposes that the learner is interested in disaster preparedness.

The overall style of YCL is informal, bright, and attractive. The book is over-sized with large, easy-to-read type. The writing is anecdotal and is aimed at junior high school reading ability level. Both the writing style and the illustrations are light and humorous in tone. As in the other materials, the people are predominantly white and male and, though the book is specifically aimed at junior high school students, most sketches show adults.

Curriculum Design

The content analysis of existing medical self-help materials yielded detailed recommendations for the form and content of the materials. The resulting curriculum design was divided into the following five sections: (1) general

requirements for a casualty prevention and care instructional program; (2) program goals and curricular objectives; (3) selection and organization of instructional content; (4) selection and organization of learning experiences; and (5) an evaluation plan for the curriculum.

(1) General Requirements of a Casualty Prevention and Care Instructional Program

There was found to be a definite need for casualty prevention and care knowledge. Additionally there was found to be need for materials to help students change their attitudes--and therefore behavior--toward the content area. It was felt that such materials should be so designed that values of students would be clarified as a basis for learning the discrete bits of knowledge that make up the curriculum content of casualty prevention and care.

Four general requirements were identified to serve as themes throughout the materials, so that value and attitude development could accompany knowledge development. These were:

1. Students should be required to value human life; (value)
2. They should want to prevent and avoid accidents; (attitude)
3. They should know what to do in a medical emergency caused by a disaster; (knowledge)
4. They should be familiar with procedures to accurately carry out casualty care; (knowledge).

(2) Program Goals and Curricular Objectives

The four general requirements were more precisely stated as learning goals, which served as sources for deriving more specific curricular objectives. It was concluded that when students have completed the manual they should:

1. Have increased respect for the value of human life.
2. Have an increased desire to prevent and avoid accidents;
3. Have an increased understanding of the value of knowing casualty prevention and care procedures;
4. Have increased confidence in their ability to handle medical emergencies due to natural, technological, and nuclear disasters.

Generic curricular objectives were derived from the above goals and applied to all casualty prevention and care lessons in the student manual. The curriculum would help students to:

a. Evaluate the level of respect shown for human life in a variety of disaster and medical emergency situations.

b. Indicate unsafe conditions and practices within disaster and medical emergency situations that might cause casualties to occur.

c. Demonstrate knowledge of a rationale for the importance and utility of casualty prevention and care knowledge.

d. Demonstrate knowledge of ways to improve personal and family standards for safety and casualty prevention.

e. Select appropriate casualty care procedures for a variety of medical emergencies.

f. Demonstrate knowledge of the steps involved in casualty care procedures for a variety of medical emergencies.

(3) Selection and Organization of Instructional Content

The content analysis recommended that the casualty prevention and care curriculum include the following content domains:

1. Wounds and Bleeding
2. Shock
3. Respiratory Emergencies
4. Poisoning and Drug Abuse
5. Burns
6. Cold and Heat Exposure
7. Bone and Joint Injuries
8. Emergency Rescue and Transportation of the Injured
9. Radiation Sickness and Shelter Health Problems

The recommended approach to content organization in the student casualty prevention and care manual was that it be divided into chapters based on specific types of injuries, within the context of disaster situations. Instructional content was organized in ten lessons. Designations for these lessons, with their particular instructional/learning objectives, were as follows:

Lesson A: Why Casualty Care?

(1) Demonstrate knowledge of the value of correct casualty care procedures.

(2) State the disaster situations in which casualty care is important.

(3) State the basic rules for casualty care.

Lesson B: Wounds and Bleeding*

(4) Demonstrate understanding of the seriousness of heavy bleeding.

(5) Demonstrate knowledge of methods for controlling bleeding.

(6) Demonstrate knowledge of basic methods of bandaging.**

Lesson C: Shock

(7) Demonstrate understanding of the seriousness of shock.

(8) Demonstrate knowledge of the signs and symptoms of shock.

(9) Demonstrate knowledge of the injury situations in which shock can occur.

(10) Demonstrate knowledge of the casualty care procedures used for treating shock.

Lesson D: Respiratory Emergencies

(11) Demonstrate understanding of the seriousness of respiratory failure.

(12) Demonstrate knowledge of causes of respiratory failure.

(13) Demonstrate knowledge of the recommended method for giving artificial respiration.

(14) Demonstrate knowledge of the steps involved in performing mouth-to-mouth resuscitation.

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* Due to space limitations, it was later decided to limit development to basic facts about bleeding.

** Based on Red Cross comment and pilot test results, this section was later deleted.

Lesson E: Poisoning and Drug Abuse*

(15) Demonstrate understanding of the seriousness of poisoning and drug abuse.

(16) Demonstrate knowledge of causes of poisoning and drug abuse.

(17) Demonstrate knowledge of various types of poisoning.

(18) Demonstrate knowledge of methods used for emergency treatment of poisoning and drug abuse.

Lesson F: Burns

(19) Demonstrate knowledge of various types of degrees of burns.

(20) Demonstrate understanding of the serious consequences of burns.

(21) Demonstrate knowledge of the methods used for treating burns.

(22) Demonstrate knowledge of complications resulting from burns and how to prevent them.

Lesson G: Cold and Heat Exposure**

(23) Demonstrate knowledge of symptoms of cold and heat exposure.

(24) Demonstrate understanding of the serious consequences of cold and heat exposure.

(25) Demonstrate knowledge of the steps involved in treating cold and heat exposure.

Lesson H: Bone and Joint Injuries***

(26) Demonstrate knowledge of various types of bone and joint injuries.

(27) Demonstrate knowledge of symptoms of bone and joint injuries.

(28) Demonstrate knowledge of procedures for handling persons with bone and joint injuries.

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* This chapter was later deleted, as being not disaster-related.

** This chapter was later divided into two chapters, one on Cold Weather Emergencies and one on Hot Weather Emergencies.

*** Based on Red Cross suggestion, development was limited to bone injuries and very general splinting procedures.

Lesson I: Emergency Rescue and Transportation

(29) Demonstrate knowledge of when rescue and transportation procedures should be employed.

(30) Demonstrate knowledge of the dangers of emergency rescue and transportation.

(31) Demonstrate knowledge of methods of emergency rescue and transportation.

Lesson J: Radiation Sickness and Shelter Health Problems*

(32) Demonstrate knowledge of the effects of radioactive fallout.

(33) Demonstrate knowledge of protective measures against radioactive fallout.

(34) Demonstrate knowledge of correct care given radiation casualties.

(35) Demonstrate knowledge of health problems likely to occur in shelter situations.*

(36) Demonstrate knowledge of procedures for handling common shelter health problems.*

(4) Selection and Organization of Learning Experiences

It was concluded that the general method used in presenting the content of casualty prevention and care to students would be the fictional case study, resembling the very brief short story. Main characters in these stories would be persons in the age group of the target audience and would include references to experiences of, and vernacular commonly used by, young people throughout the nation. Each of the characters would be confronted with medical emergencies resulting from particular types of disasters, with one type of disaster per lesson serving as the focal point for each situational context. Interwoven throughout each story would be recommended steps to take in identifying various types of injuries, and procedures to follow if casualty care was needed.

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* The subject of Shelter Health problems was later considered too detailed to handle in a manual of this length and was deleted.

Reasons for taking the above approach to content presentation focused chiefly on the need for motivating students to read, and absorb the content of, the materials. An interesting fictional approach (with illustrations) seemed more likely to stimulate motivation to proceed than if the content were presented in a more didactic fashion. In fact, experience with materials development and testing indicated that a "short story" approach to fictional material allowed effective presentation of content without taxing the attention span of students in the target group. It was hoped that students would begin thinking and acting in a "preventive" mode with respect to casualties and medical emergencies, rather than the reactive mode usually associated with first-aid or medical self-help content.

Each casualty prevention and care lesson dealing with a medical emergency was set up as follows:

1. Introduction. Each lesson was introduced by review of the appropriate content area which focused on a specific medical emergency (e.g., shock). The introduction presented a rationale for the lesson's content, "advance knowledge organizers," and student curricular objectives. The purpose of the introduction was to set the stage for not only the curricular content, but also the fictional setting used to present the content. The introductions were brief and concise, to keep to a minimum the didactic nature of each lesson at its outset.

2. Fictional (Situational) Context. Each fictional setting was an illustrated short story of young people involved in a disaster situation in which a specific type of medical emergency had occurred. Each group of fictional characters was involved in performing correct casualty care procedures for the medical emergencies dealt with.

   The medical emergencies, and contexts (in terms of disasters) that would be covered are listed below.

Lesson	Medical Emergency	Disaster Situation
A	None (Introduction)	None
B	Wounds and Bleeding	Hurricane
C	Shock	Earthquake
D	Respiratory Emergencies	Flood
E	Poisoning and Drug Abuse	Widespread Food* Poisoning

* Deleted later.

F	Burns	Forest Fire
G	Cold and Heat Exposure	Winter Storm/ Heat Wave*
H	Bone and Joint Injuries	Tornado
I	Emergency Rescue	Industrial Explosion
J	Radiation Sickness and Shelter Health Problems	Nuclear Explosion

3. Knowledge - Comprehension Check. Each lesson contained a section, following the situational context, that directed students to derive casualty prevention and care rules and procedures from information presented within the narrative. This process was intended to familiarize the reader with essential content without submitting him or her immediately to a test.

4. Content of Learning.** Each lesson then contained a section dealing with specific rules and procedures to be applied, given specific medical emergencies. These sections detailed correct casualty care procedures in expository and illustrated form, and in step-by-step sequence.

5. Self-Evaluation. As a culminating activity each lesson directed students via a series of multiple-choice questions to check their knowledge regarding correct casualty care.

(5) Evaluation Plan for the Curriculum

It was decided that the curriculum evaluation should take place at three levels: (1) the learning experience level, (2) the instructional level, and (3) the level of the school as an institution.

The evaluation plan proposed for the project, thus, would embrace those levels and probe into (1) the effectiveness, (2) usability, (3) relevance, and (4) acceptance of the curriculum.

A detailed evaluation plan was developed specifying (1) the information to be collected, (2) the source of information, (3) ways and means of collecting the information, (4) responsibility for collecting the information, (4) frequency and schedule of collecting, (6) specifications for analysis and interpretation of the collected information, and (7) the use to be made of the evaluation's outcome.

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* Placed in two separate chapters later.

** Later expanded, into two sections, one introducing vital facts related to the injury, the other including the information given above.

SECTION III. DESCRIPTION OF DEVELOPMENT AND TESTING

Phase I: Analysis, Design, and Development

In general, Phase I progressed as planned and was on schedule. The project staff had followed the task sequence as introduced in the milestone schedule.

To determine the scope and organization of lessons for the supplement, the Content Analysis of Your Chance to Live, the Medical Self-Help materials, and the American Red Cross First Aid and Personal Safety book was conducted, and a 24-page report of the analysis, including recommendations, was submitted for approval to DCPA and to the American Red Cross. The curriculum design for the student and teacher materials was also completed and submitted. In order to identify and gain the cooperation of rural, suburban, and urban schools, contacts with potential test sites were initiated. The three schools under consideration (and ultimately chosen) were: Mesa Verde in Citrus Heights, California (suburban school in the Sacramento metropolitan area); Albany High School in Albany, California (urban school in the San Francisco Bay Area); and Neah-Kah-Nie School in Rockway, Oregon (rural school on the northern Oregon Coast).

The only discrepancies between the plan and its implementation were that: (1) the late arrival of the signed contract resulted in a small delay in initiating the project; and (2) at the time of the first bi-monthly report, no comments had yet been received from the Red Cross or DCPA on either the Content Analysis report or the first prototype lesson.

Phase II: Materials Development

At the July 23 meeting at DCPA, the value, validity, and necessity of the story as a focal part of the lessons were confirmed. Although there was agreement that FWL had correctly implemented the specifications of the contract in developing the lessons, there was no final determination made at the meeting on the nature of the instructional section and on the level of competence which the materials should address. Such determination was expected to be reached based on the Red Cross technical review and through specific

discussions with DCPA, the Red Cross technical reviewer, and the project. Thus, it was agreed that further development would be delayed until such determination was made.

On August 5, Dr. Ridgeway, Education Advisor of DCPA, and Mr. Petersen, Deputy Director of the Staff College, visited the project. During the visit, the status and progress of the project were reviewed. Dr. Ridgeway expressed his desire to preserve the instructional content of the lessons as FWL had presented it.

PHASE III: Materials Revision and Reproduction

A. Interactions with the American Red Cross.

On August 14, Mr. Wes McKenzie of the Western Regional Office of the American Red Cross visited and received a briefing and project materials in preparation for his TDY to the Washington, D.C. Headquarters of the American Red Cross where he would be working on assignments relevant to the review of instructional materials prepared by the project.

In mid-September, the Red Cross technical review was received. The opinion expressed in the review was that certain portions of the lessons represented a "duplication" of a Red Cross First Aid Course and that, to avoid such duplication of effort, a major rewrite of the lessons would be necessary. However, the revision suggestions extended beyond that conclusion and fell into three categories: (1) suggestions relevant to technical accuracy; (2) suggestions of omissions and deletions based on the Red Cross staff's perception of "duplications"; and (3) stylistic alterations.

On October 2 and 3, the project staff met with Mr. Wes McKenzie who was responsible for preparing the Red Cross suggested revisions for our curriculum materials. At this working session, it was felt that good progress was made in resolving the issue of revision.

In those areas where the accuracy of the materials was in question, Mr. McKenzie provided clarification and explanation which would allow for correction. This category included relatively few items, which was encouraging as a validation of the accuracy of the materials.

In those instances where Red Cross felt that FWL was intruding into their domain, FWL operated on the two principles that:

(1) according to DCPA instructions, there be no reduction in content; and

(2) on the other hand, if there were instances where content--as it was presented--might be difficult to learn without supervised, repeated practice sessions, the presentation would be altered. That alteration might not require deletion of the material in question, but might be a change in the presentation so that students would be clearly aware of the need for supervised practice sessions not provided via these materials. Students would thus be encouraged to seek further training in authorized first aid courses, but would still be introduced to a specific content area.

Each proposed alteration would now be individually reconsidered as revision progressed. In instances where FWL questioned the Red Cross proposed change, the results of student testing in the pilot test situation were to be considered. For example, Red Cross objected to a discussion of specific kinds of splints which was covered in some eight pages in the prototype version. While an eight-page deletion seemed to be rather significiant reduction of content, it was found from student interviews and from the test results that the information here was difficult for students to comprehend by reading and studying only which was the means utilized by these materials. Thus, it seemed reasonable to assume that this section of the materials should be revised and deleted or reduced in content.

On the other hand, Red Cross questioned the inclusion of much of the information contained in the chapter, "Shock," whereas test results showed that students were able to learn the content in the chapter. Therefore, some consideration would be given to revising the presentation, rather than simply deleting the material.

In all cases, of course, the decision was to be made by project staff, subject to the approval of DCPA.

In the second bi-monthly report, the following recommendations were made:

> There is a need to review the implications and impact of (1) a delay of the American Red Cross technical review and (2) a possible change in the nature of the instructional content and level of competence at which the lessons aim.
>
> The delay of the technical review will have an impact on (1) the timeframe of the project (about one and a half months as of the end of August) and (2) the timing of the field test (may not start before January).
>
> The impact of a change in the nature of the instructional content and the level of competence can be determined only after the kind and size of the change is known.

B. Pilot Testing

Between August 18 and September 8, pilot testing was conducted at Mesa Verde High School in Citrus Heights, California. Mesa Verde is an innovative year-round school with emphasis on career development.

The Pilot Test Program was conducted under the guidance of Ms. Dee Ward, leader of the math-science cluster program of the school. As cluster leader, Ms. Ward served as administrator/counselor/teacher. (She holds an administrative credential and has since accepted a position as principal of a junior high school in the San Juan District.)

Her experience relevant to the content of the materials included working in the university hospital while attending Michigan State University; having completed courses in first aid, life saving, and water safety; and having been the radiological director of Mecosta County, Michigan. The latter position required training for the purpose of being on duty in the event of nuclear attack.

The testing consisted of one session per day for a total of 15 sessions. 29 students (6 ninth graders, 18 tenth graders, and 5 eleventh graders) participated in the Pilot Test Program. It was offered in the Career Explorations class (Health Services) conducted for students enrolled in the math-science cluster who have expressed an interest in that career area. The class concentrates on the development of positive self-concepts, personal career awareness, and career planning. Students demonstrate a wide range of ability levels.

Prior to beginning the pilot test, Ms. Ward stated that a main concern in using the casualty care materials was to find "ways to make the material seem real and to try to develop some activities that will get the students moving, doing, thinking, and relating." She intended to involve the school nurse and outside speakers. Ms. Ward hoped that the materials would be valuable to enhance students' self-confidence, to give them an awareness of situations like these in order to develop into sensitive human beings, and for the very practical need for such information in case of disaster.

Students completed the modules on a self-pacing, individualized mode. Daily class group discussions were often generated by topics or questions from the students themselves. Additionally, Ms. Ward had the time and facilities to include relevant speakers and demonstrations.

For example, the school nurse was invited to participate in the class; a man who was undergoing radiation treatments for cancer of the throat discussed

with the class his reactions to the therapy; and an ambulance team brought the vehicle to the school and demonstrated various life-saving equipment. (This visit led directly to a request from the students for a cardio-pulmonary resusciatation course. The course was organized and offered to students for credit and was also made available to interested members of the community.)

Pilot test findings (discussed in Section IV of this report) were given careful consideration in the final revision of the materials.

C. DCPA Guidance

Guidance for revisions which was given to staff from DCPA seemed to center on one area, which was the desirability of raising the maturity level of the stories. Particular revision was suggested on the story in the "Radiation Sickness" chapter. This request was carefully adhered to throughout the revision process. The initial emphasis in the preparation of the materials was to provide a book which students would find appealing because of the ease of absorbing the material. Revision would now place emphasis on appealing to the upper age limit, as specified in the contract, in an attempt to not only interest but also challenge all students in the project target group.

The second DCPA guidance, referred to earlier, was that, in response to the Red Cross suggestions, there would be no reduction in content of the materials. This support of the materials in their present form was greatly encouraging, and would be considered throughout revision.

D. Project Planning

In the third bi-monthly report, Far West Lab described the status of testing, specified current demands on the project, and introduced a recommendation for adjustment.

Field testing was planned in three environments:

(a) The Mesa Verde School site requested that the field test there be conducted from Monday, January 5, through Friday, January 23, 1976. This is a three-week period, during which the teacher will have one group of students. (At Mesa Verde, a stable group of students lasts for only three weeks; beyond that time span, some students enter the class and some leave it.) This schedule meant that materials would have to be ready either before the school's Christmas vacation, which is December 22 through 31, or some arrangements would have to be made to meet with the teacher during the vacation period.

(b) The same three-week period was scheduled for the test which would be conducted at the Albany High School site. It was decided that if a fourth week proved necessary, it might be added, though there would be some schedule conflict due to the end of the first school semester on January 30, 1976.

(c) At that time, the school site in Oregon agreed that we conduct our field test there beginning in December. This required the use of some of the prototype materials used at the Mesa Verde pilot test site, except for those chapters which would be revised prior to the December deadline.

Considerable project attention at this time focused on the production of accurate illustrations and on style of the interior book design.

Development of the teacher's manual was also continued during this period and it was planned that a prototype version would be ready for use by the field test teachers. Ms. Dee Ward, pilot and field test teacher at the Mesa Verde site, served as a teaching consultant for the teacher's manual. Additional improvements were made at the suggestion of Red Cross consultant Elizabeth Robertson.

Cost and time factors required than that the revision progress would result--as closely as possible--in the final versions of the student and teacher materials. Following the January tests, necessary minor changes would be made. Conclusions resulting from the field tests would then be forwarded to DCPA.

Because of the delayed response of the American Red Cross and the extended time needed to resolve the "content conflict" issue developed by Red Cross, a time delay of over two months had occurred. Accordingly a two- to three-month extension of the project was recommended and requested. The request was subsequently approved by DCPA.

Phase IV: Field Testing

At the time of the fourth progress report, revision of first five chapters--"Where To Begin," "Shock," "Bleeding Emergency," "Respiratory Emergency," and "Bones"--was completed. Revision included: completion of all new artwork for those chapters, improvement of existing artwork through additional rendering and correction of any procedural inaccuracies; upgrading reading ability level of the stories for those chapters; inclusion of agreed-upon Red Cross revisions; inclusion of revisions called for from pilot test results; and

stylistic improvements throughout each chapter. Development of the two final units, "Burns" and "Emergency Transportation," was also completed.

The physical format of the total book was completed, including layout plan, book design, and selection and printing of chapter divisions and subheads. The preliminary design for the book cover was completed. Work on the cover was to continue when confirmation of title was received.

A. Field Test Data Collection Instruments

- Teacher: Field test data collection instruments administered to the teacher included the following:

Daily log. The teacher maintained a daily record of the use of the lessons, including time spent on various sections of each chapter, method of presentation, and teacher and student reactions.

Questionnaires. A questionnaire given prior to the start of the field test asked for such information as the teacher's background in the content area, what he or she hoped to accomplish by using the materials, and the plans for presentation of the materials. A second teacher questionnaire was given at the end of the field test to determine the teacher's opinion regarding specific aspects of the use of the materials, such as how well they worked in the specific school setting and whether or not the teacher would consider using the materials again.

Interviews. Several interviews were conducted with each teacher at various times throughout the field test.

- Student: For the field test, several student instruments were revised. Separate pre-test instruments were added for each chapter, and a post-chapter test was added to chapter one. The three pilot test student questionnaires were revised in order to obtain more precise data from the field test situation.

Data collection instruments administered to students included the following:

Questionnaires. Three major questionnaires were given to students, one prior to the beginning of the field test, one at the mid-point, and one at the end of the field test. The first questionnaire asked for information regarding the students' experience with respect to casualty care, his or her attitudes about studying casualty care, and his or her self-confidence with respect to casualty care. The mid- and end- questionnaires were designed to elicit responses about the specific materials and asked for student opinions regarding the format and presentation as well as the content. The end

questionnaire also included a duplication of the pre-questionnaire to determine changes in student attitudes.

Pre- and post-tests. For each of the ten student chapters, pre- and post-tests were given testing acquisition of knowledge.

Interviews. Student interviews were conducted with total class groups small groups of four to six students, and with individual students.

Written comments. Students were encouraged to write directly on the student materials in order to make specific comments on some aspect of those materials.

B. Description of Field Test Sites and Personnel

Following is a description of the actual field test situations, including the time frames, the structure of the classroom situations, and the background and experience of the field test teachers.

- Mesa Verde High School, Citrus Heights, California. The test at this site was again conducted by Ms. Ward with a new group of students in the Career Explorations class. The content, organization, and student population of the class was similar to that of the pilot test group. The field test was conducted from January 26 through February 20. Total class time scheduled for the field test was eighteen days; however, regularly scheduled career speakers occasionally interrupted work on the casualty care materials.

On Wednesday, February 4, 1976, this class was observed by Elizabeth Robertson from the American National Red Cross as part of the Red Cross validation of the materials. Several on-site observations were conducted by FWL staff, during which time the total class was observed, the teacher was interviewed, and students were interviewed individually and in small groups. In addition, Ms. Ward worked further with FWL personnel at the lab in the development of the teacher's manual.

- Neah-Kah-Nie High School, Rockaway, Oregon. In Oregon, the casualty care materials were field tested by Mr. Gary Sather, physical education teacher and head basketball coach. Mr. Sather had taken both the Standard and Advanced Red Cross First Aid courses, an athletic injuries course, and had served for five years as a volunteer for the Southern Wasco County Ambulance and Fire Department.

The materials were introduced in two ninth-grade health classes, as part of the state requirements for health education for all high school students.

(Oregon is presently separating health education from physical education classes.) The students in these classes ranged in achievement levels from low (4th or 5th grade level) to relatively high (10th to 11th grade level). Many of the students had average ability but were underachievers. Many of them had little or no interest in school or in any particular subject at all, according to Mr. Sather. Many were children of loggers or fishermen. Neah-Kah-Nie High School serves the community of Rockaway (810 residents) and surrounding area. There are 313 students in the school, which is located on Highway 101 on the northern coast of Oregon.

The principal, Mr. Don Langan, estimated that some 30 percent of the student population is on welfare, and that 49 percent would qualify, under federal requirements, as educationally disadvantaged students.

Mr. Sather was particularly interested in the casualty care materials because, as he stated, "Many times in disasters and accidents in our area it takes too long to get professional medical help for a victim of a disaster or accident, and the people of this area need to know the basic steps in order to take care of emergencies."

The classroom in which the casualty care materials were tested is organized traditionally. Physically, there are five rows of six desks each, all facing the front of the classroom. The class format involves reading, lecture, and class discussion, with no hands-on activities. Students are encouraged, but not required, to take work home to study. Each class is forty minutes in length, five days a week.

The field test began on December 1, 1975, and ended on January 15, 1976, with two weeks off for Christmas vacation. Several class sessions were spent on other health education materials.

Although Mr. Sather had intended to include speakers and demonstrations in the course presentation, time constraints prevented this involvement.

One two-day on-site observation was conducted by FWL staff, during which time the total class was observed, the teacher was interviewed, and three groups of students were interviewed and taped.

- Albany High School, Albany, California. The field test at Albany High School began on Wednesday, February 4, 1976, and ended March 4. The racially diverse class consisted of 36 ninth and tenth grade boys enrolled in a boys' physical education class. Most of the boys were identified as relatively low-achievers and basically disinterested in school. Class sessions were 45 minutes long.

The class was conducted by a student teacher, Mr. Robert Shaffer, for whom this course was his first classroom teaching experience. Mr. Shaffer was given complete responsibility for the daily conduct of the class. He had only a few days notice of the content of the class and consequently had very little time for preparation. He had taken one Red Cross first aid class three years ago and more recently was enrolled in a university course for the prevention and care of athletic injuries.

Mr. Shaffer was supervised by master teacher, Mr. Lyle Setencich, an Army medic on reserve, and physical education teacher and head football coach at the school.

The class was conducted in a traditional though informal manner. Students read the materials aloud and discussed the content. Mr. Shaffer encouraged them to discuss personal incidents in which injuries had been observed and cared for. He used the prototype version of the teacher's manual for teaching ideas.

On Thursday, February 5, Ms. Elizabeth Robertson of the National Red Cross staff observed the Albany site. Additional on-site observations were conducted by FWL staff. Both the student and master teacher were interviewed.

SECTION IV: REPORT ON FINDINGS OF PILOT AND FIELD TESTING

A. Findings of Pilot Testing

The results of the Pilot Test Program are summarized below.

1. Information gathered from a pre-test questionnaire, administered before the casualty care materials were begun, showed the following general conclusions:

   a. Everyone says it is important or very important to study casualty care, and all but one are interested in such study.

   b. Most say they know a little about the subject; most have taken a beginning first aid course.

   c. Students know least about handling radiation sickness and the hot weather emergencies; most about fractures, breathing failure, and severe bleeding.

2. Information gathered from the mid- and post-test questionnaire showed the following general conclusions:

   a. The chapters were fairly easy to understand, required little time outside class, and were interesting enough to hold the students' attention for the complete set of materials.

   b. Most students found the stories interesting and believable, but some felt that the reading level was perhaps too easy or childish. (The need to raise the level of the stories was also noted by DCPA.)

   c. Sketches were helpful and necessary, but students preferred that they be more realistic and less cartoon-like.

   d. The use of italics to emphasize symptoms and care in the stories was very helpful and liked.

   e. Cover style was not well liked. (This would automatically be changed; cover was used for prototype only.)

   f. There was some sentiment for a smaller, pocket-sized booklet.

   g. Most students were confident in their ability to handle an emergency in which someone needed care for an injury, with five indicating it would depend on the injury.

3. The pre- and post-test scores for all chapters show the following general conclusions:

a. The overwhelming number of students improved from pre- to post-tests on all units. Of 65 students taking both pre- and post-tests, 60 improved and 5 remained the same. An average gain was demonstrated of almost 5 correct answers (c17%), while there was an average decrease in incorrect answers of about 4 in each case.

b. There was an average of 54% of correct answers on the pre-test; 72% of the answers given were correct on the post-test.

c. An average of 30% of all answers given on the pre-test were wrong (70% given were correct.) On the post-test, an average of 13% of the answers given were incorrect (87% given were correct.)

Pre- and post-test results are presented below.

Individual Units	Pre %/Post % correct	% of Answers Given Which Were Wrong Pre/Post
Shock	77%/90%	---
Bleeding	56%/76%	27%/8%
Respiratory	54%/71%	35%/8%
Bone	62%/68%	30%/23%
Cold & Heat	50%/75%	35%/16%
Radiation	59%/86%	20%/10%

POST -TEST SCORES ONLY*

	% Ss over 70%	Average % correct	Average % of Rs Wrong	(N)
Shock	91%	91%	---	(22)
Bleeding	50%	73%	11%	(20)
Respiratory	59%	73%	18%	(17)
Cold & Heat	55%	68%	26%	(11)
Bone	40%	61%	25%	(10)
Radiation	80%	89%	10%	(20)

* Deleting 2 Ss who only took a few of the tests and were consistently low.

4. Revisions then took into consideration the pilot test information, as follows:

(1) An item-by-item analysis of student responses determined those content items on which students could not perform adequately. Instruction on those items was revised to improve student performance.

(2) An attempt was made to retain a clear, straightforward presentation, so that the materials continued to be easy to comprehend, and interesting enough to hold attention.

(3) The story idea was retained as an important part of each unit, but the presentation level was upgraded.

(4) The artist was informed of the students' reactions, and revised presently existing sketches to make them more realistic and less cartoon-like. Specific revisions were discussed at length, and it was felt that these revisions would greatly improve the quality of the materials.

(5) The use of italics was retained.

(6) A single four-color cover was to be designed, as specified in the contract.

(7) Although sentiments for a small booklet were understandable from the students' point of view, cost constraints prohibited it. The materials would be packaged in one book, 8-1/2" by 11", in order to be the most economical.

(8) Generally, it seemed to be true that students did in fact, learn from the materials and materials should thus be revised carefully to maintain the positive aspects of the presentation.

Other data from students, gathered from a taped interview and comments written directly in the booklets, as requested by project staff, were considered individually as revision progressed. Comments were considered not only for changes (such as: "This sentence confused me."), but also for retention of existing material (such as: "I learned from this pamphlet". "I

remembered more from this pamphlet than another one I have read." "The story situations really make me understand the problem." "The pictures are very good also.").

In addition to the alterations discussed above, it was suggested that one chapter, "Heat and Cold Emergencies," be changed so that it would be presented in two separate chapters--one called "Hypothermia and Frostbite," and the other called "Heat Cramps, Exhaustion, and Stroke." This recommendation was based on the student response to the chapter. The chapter in its original form--dealing with five different emergencies, their respective signs and care--seemed to be too much to handle in one chapter.

5. Teacher Comments. The materials were discussed with the teacher. Verbal comments from her included:

(1) Separate the pre- and post-tests for clarification. (In the pilot test situation, both tests were taken on the same page, using pen for one, pencil for the other.)

(2) The estimated time needed to field test the entire ten chapters would be only three weeks. In the pilot test, only seven chapters were used, and there was more than enough time in three weeks to complete them. One and a half days were used by the pilot test supervisor to gather information.

This suggestion reinforced the time allotment suggested in the "Content Analysis" (page 19) submitted at the beginning of the project; i.e., that we could "assume a 45-minute class period, or 3-3/4 hours per week. Casualty prevention and care could then be taught as a two- to four-week unit, for a total of 7-1/2 to 15 hours."

B. Finding of Field Testing

The results of the Field Test Program at the three sites - Mesa Verde (MV), Neah-Kah-Nie (NKN), and Albany (A) - are summarized below. Approximately 100 students were included in the program.

1. Information gathered from the pre-test questionnaire, administered before the casualty care materials were begun, showed the following general conclusions:

a. Almost all students (96%) say it is very important or important to study casualty care. No difference among sites.

b. Most students (62%) know "a little" about casualty care. Students are less knowledgeable about casualty care (according to self-rating) than students at either of the other sites.

c. Almost all students at NKN had a previous first aid class in school the previous year; about half the students at MV and only 3 students at A had such a class.

d. Most people (82%) are very interested or interested in studying casualty care now. No substantial difference among sites.

e. The casualty care in which students have the least familiarization and least confidence are: radiation sickness, heat emergencies (stroke, exhaustion, cramps) and cold emergencies (hypothermia).

f. The areas in which students have the most familiarity and the most confidence are also similar across sites: broken bones, breathing failure and bleeding. However, even in these most familiar areas, at least one third of the students only "know something about" handling such situations at the most. In contrast to the other two sites, A again had a smaller percentage of students who had confidence in their ability to provide casualty care.

g. Most students say they want to learn as much as they can about how to take care of people in casualty care situations. Treatment of broken bones and radiation sickness is the most popular of the specifically mentioned areas.

2. Information gathered from the mid- and post-test questionnaires showed the following general conclusions:

a. All but one student say it is important or very important to study casualty care; most are interested in doing so.

b. Most students NKN and MV know a little or "pretty much" about the subject; A continues to be less knowledgeable, (according to self rating).

c. Students were least familiar and least confident in treating the hot weather emergencies and (at A only) frostbite.

d. Students were most familiar and most confident in treating (MV) shock, moving an injured person, and broken bones; (NKN) severe bleeding, severe burns, and breathing failure; (A) breathing failure, broken bones, severe bleeding, and moving an injured person.

e. Students at all three sites indicated they would most like to learn about how to take care of people in just about any kind of accident or first aid situation.

3. Information gathered from the mid- and post-test questionnaires showed the following general conclusions:

a. Almost everyone thought the chapters were easy to understand.

b. The average time, including class time, spent on each chapter was about one hour (MV spent less than an hour; NKN spent one hour; A spent an hour and a half.)

c. Most people thought all six sections of the chapters were good or very good. The story itself was liked the best.

d. All stories were thought to be good or very good.

e. Most students thought the drawings were helpful for understanding the materials; might have liked more of them; might have been more realistic.

f. Chapters were generally informative and interesting, though MV students thought they were perhaps too easy and young for them, especially since many of them had already had first aid training.

g. Some students requested more instruction, more demonstrations, and "more to do."

h. Most students indicated that they liked studying casualty care with these materials. (Only 5 indicated they would have preferred other materials.)

i. Most students indicated they would like to enroll in a first aid course for further training.

4. Pre- and post-test results are presented below.

Mesa Verde: Pre-Post Tests %

Individual Units	% of Students over 70% correct	Average % correct	% of Answers given which were wrong	Number (who took pre & post)
BEGIN	79%/86%	83%/87%	18%/10%	28
SHOCK	64%/83%	75%/86%	19%/9%	28

Mesa Verde: Pre-Post Tests % (cont.)

Individual Units	% of Students over 70% correct	Average % correct	% of Answers given which were wrong	Number (who took pre & post
BLEEDING	36%/82%	65%/86%	25%/10%	22
RESPIRATORY	47%/88%	64%/82%	25%/9%	17
BONES	47%/90%	70%/88%	24%/13%	19
COLD	36%/73%	64%/82%	34%/28%	11
HEAT	45%/90%	67%/84%	37%/21%	11
BURNS	57%/71%	71%/79%	17%/6%	14
TRANSPOR-TATION	75%/91%	78%/90%	14%/19%	12
RADIATION	14%/87%	60%/81%	28%/19%	15

Neah-Kah-Nie: Pre-Post Tests %

Individual Units	% of Students over 70% correct	Average % correct	% of Answers given which were wrong	Number (who took pre & post
BEGIN	86%/92%	91%/96%	17%/13%	50
SHOCK	50%/100%	71%/88%	23%/7%	46
BLEEDING	62%/93%	70%/88%	24%/10%	45
RESPIRATORY	37%/88%	65%/83%	33%/16%	41
BONE	43%/82%	68%/85%	23%/16%	44
COLD	47%/93%	71%/87%	40%/29%	43
HEAT	37%/72%	63%/77%	44%/34%	43
BURNS	30%/67%	67%/77%	20%/10%	30
TRANSPOR-TATION	70%/89%	78%/89%	17%/12%	27
RADIATION SICKNESS	58%/97%	71%/90%	27%/13%	29

Albany: Post-Test Survey %*

Units	% of Students over 70% correct
53-item sample of questions from all units	65%

* Because of a technical error at the school, valid test data was limited to a post-test consisting of a 53-item sample of questions covering all ten units. This test should be considered more difficult than those given at the other sites because: (1) it required recall of all material after the end of the total program; and (2) it was administered under adverse test conditions.

5. An Interpretation of Findings

The above test scores show that:

a. At MV, approximately 84% of the students scored 70% or above on the post-tests (as opposed to approximately 50% scoring 70% or above on the pre-tests);

b. At NKN, approximately 87% of the students scored 70% or above on the post-tests (as opposed to approximately 52% scoring 70% or above on the pre-tests); and

c. At A, 65% of the students scored 70% or above on one general post-test (as mentioned above, no valid pre-test scores for A are available).

These scores can be evaluated in terms of the anticipation that in field-test situations 70% of the students will perform at 70% or better. Both the Mesa Verde and Neah-Kah-Nie sites show scores significantly above that standard of performance. The scores also show considerable student improvement from pre- to post-tests.

In addition, above scores show improvement over the pilot test figures; in the pilot test at Mesa Verde approximately 63% of the students performed at 70% or better.

6. Teacher Comments

In general, all three teachers found the materials easy to use. Preparation required only a reading of the materials themselves if time constraints did not allow for additional study. All three indicated they would like to see filmstrips incorporated into the course, and suggested the addition of an annotated list of films available to educators on the subject.

The teacher's discussion guide to the "Getting It Together" section was felt to be useful for handling student questions regarding the materials. The teachers indicated that the prototype version of the teacher's manual was helpful, although they did not find it necessary to use many of the activities in the book. A request was made that the manual be less wordy; this request was attended to in the revision process.

Teachers found the materials especially helpful with students who were either of average ability or who were low-achievers, and with eighth and ninth graders. The reading level was found to be suitable for most students, as was the maturity level of the stories. One teacher commented that students found it interesting that the central characters in the stories were people their own age.

The teachers felt that the materials would be a useful and useable addition to a regular school program, and would use them again.

SECTION V. DESCRIPTION OF PRODUCTS

The purpose of the casualty care project was to produce a student manual and accompanying teacher's guide for the purpose of educating youth in medical self-help procedures which might be needed in time of disaster. The two major products of the project are a student manual and accompanying teacher's guide.

The products developed by this project guide teachers in conducting casualty prevention and care instruction, and provide students with material which can be learned quickly and easily. Long-range behavioral objectives are as follows:

- Students will explain the importance of knowing casualty prevention and care procedures and will describe some general ways to help any injured person in an emergency situation.
- Students will explain how to handle emergency situations in which an injured person is suffering from the following: shock, severe bleeding, respiratory failure, bone injuries, hypothermia, frostbite, heat stroke, heat exhaustion, heat cramps, burns, and radiation sickness.
- Students will explain how to move an injured person if necessary in an emergency situation.

Analysis of field test data indicates that the project has successfully achieved these objectives, and is favorably received by the target audience.

Your Chance To Help was selected from a list of possible titles recommended by project staff and by the students as the pilot test site at Mesa Verde High School in Citrus Heights, California. The final approval was made by DCPA staff.

Student Manual

In most respects, the student manual follows the guidelines specified in the curriculum design presented in Section II of this report. Variations from the design were briefly noted there and reasons for those alterations were discussed in Section III.

The completed student manual contains 206 pages. The design plan for the book specified the use of white space in such a way that the student would find the material visually easy to comprehend. It was intended, then, to provide "breathing space" throughout the book in order to facilitate student use of the material . Teachers were advised to recommend that students keep the

student manual as a reference book, and to use blank areas in the manual to add to and update material.

The student manual has ten chapters, as follows:

1. Where to Begin
2. Shock
3. Severe Bleeding
4. Breathing Failure
5. Fractures
6. Cold Weather Emergencies
7. Hot Weather Emergencies
8. Burns
9. Emergency Transportation
10. Radiation Sickness

The first chapter presents basic procedures to be used in case of any injury. The other nine chapters present procedures for specific injuries. These chapters follow the same basic design. In general, they each have six parts:

- *What's the Problem?* A brief introductory section describes the subject of the chapter and poses questions designed to guide students toward the most important information.

- *Here's What Happened.* A fictional story with pictures describes and illustrates correct casualty care procedures for a particular kind of injury. The story shows the correct procedures being applied by a teenager in a disaster situation. *Sentences in the story which contain important facts about casualty recognition and care are set in italics for easy student identification.*

- *What's In the Story?* The pre-story questions are restated to aid student comprehension of the casualty care facts presented in the story. Students are expected to take their answers directly from the italicized words in the story. (At this point in the chapter, their answers would not include all possible information about a given casualty care procedure, only that information given in the story itself.)

- *What Are the Facts?* This section restates important facts about the injury, including how to identify it, how to care for it, and how to keep it from getting worse.

- *What Can You Do?* A detailed, step-by-step description of basic casualty care procedures for dealing with the injury is presented here. Included are illustrations of the procedures described as well as warnings about what <u>not</u> to do.

- *Getting It Together.* A series of multiple-choice questions tests student comprehension of the unit at the most basic level. This can be used by teacher and/or students as an evaluation procedure. It can also be duplicated and given as a <u>pre-test</u> for each chapter. (Note: In the first two chapters each question has only one correct answer; thereafter each question may have more than one correct answer. Teachers are encouraged to <u>give credit for each correct answer</u>, rather than for each question; students will thus have a more accurate picture of what they have learned.)

Objectives for each of the ten chapters are as follows:

- Chapter One: Where To Begin

LONG-RANGE BEHAVIORAL OBJECTIVE: Students will explain the importance of knowing casualty prevention and care procedures and will describe some general ways to help an injured person in an emergency situation.

As they work toward that objective, students will:

1. Explain why casualty prevention and care procedures should be learned before the students need to use them.

2. Describe the general purpose of *Your Chance to Help* and identify programs or courses that can help them learn and practice actual casualty prevention and care procedures.

3. Name some general ways to handle the emergency care of an injured person.

- Chapter Two: Shock

LONG-RANGE BEHAVIORAL OBJECTIVE: Students will explain how to handle an emergency situation in which an injured person is suffering from shock.

As they work toward that objective, students will:

1. Describe a situation in which shock can occur and explain why shock is a serious problem.

2. Identify some common signs of shock.

3. Name some basic steps they can follow to care for someone in shock

- Chapter Three: Severe Bleeding

LONG-RANGE BEHAVIORAL OBJECTIVE: Students will explain how to handle an emergency situation in which an injured person is bleeding severely.

As they work toward that objective, students will:

1. Identify severe bleeding as a casualty which requires immediate care.

2. Explain how to tell when bleeding is severe.

3. Name some basic steps they can follow to care for someone who is bleeding severely.

- Chapter Four: Breathing Failure

LONG-RANGE BEHAVIORAL OBJECTIVE: Students will explain how to handle an emergency situation in which an injured person stops breathing.

As they work toward that objective, students will:

1. Describe situations in which breathing failure can occur and identify this failure as a casualty which requires immediate care.
2. Name the best method for giving someone artifical respiration and describe the basic steps involved in this method.
3. Describe other ways to help someone who stops breathing.

- Chapter Five: Fractures

LONG-RANGE BEHAVIORAL OBJECTIVE: Students will explain how to handle an emergency situation in which an injured person is suffering from a fracture.

As they work toward that objective, students will:

1. Identify common signs of a fracture.
2. Describe basic steps they can follow to care for someone who has a fracture.
3. List examples of materials they can use for splints, ties, and padding.

- Chapter Six: Cold Weather Emergencies

LONG-RANGE BEHAVIORAL OBJECTIVE: Students will explain how to handle an emergency situation in which an injured person is suffering from either exposure or frostbite.

As they work toward that objective, students will:

1. Compare and contrast exposure and frostbite and identify common signs of each.
2. Describe ways to care for someone suffering from exposure and someone suffering from frostbite.
3. Name some ways to prevent cold weather emergencies.

- Chapter Seven: Hot Weather Emergencies

LONG-RANGE BEHAVIORAL OBJECTIVE: Students will explain how to handle an emergency situation in which someone is suffering from heat stroke, heat

exhaustion, or heat cramps.

As they work toward that objective, students will:

1. Identify common signs of heat stroke, heat exhaustion, and heat cramps.

2. Describe ways to care for someone suffering from heat exhaustion, someone suffering from heat stroke, and someone suffering from heat cramps.

3. Explain how to keep these hot weather emergencies from getting worse.

- Chapter Eight: Burns

LONG-RANGE BEHAVIORAL OBJECTIVE: Students will explain how to handle an emergency situation in which someone has been burned.

As they work toward that objective, students will:

1. Identify common signs of first, second, and third degree burns and describe the seriousness of each.

2. Explain how to help relieve the pain of someone who has been burned

3. Describe ways to care for first, second, and third degree burns and to prevent infection.

- Chapter Nine: Emergency Transportation

LONG-RANGE BEHAVIORAL OBJECTIVE: Students will explain how to move an injured person if necessary in an emergency situation.

As they work toward that objective, students will:

1. Compare and contrast situations in which an injured person should not be moved and in which an injured person must be moved.

2. Describe some basic steps they can follow to move an injured person with a blanket or similar item.

3. Describe ways to move an injured person when a blanket or similar item is not available.

- Chapter Ten: Radiation Sickness

LONG-RANGE BEHAVIORAL OBJECTIVE: Students will explain how to handle an emergency situation in which someone is suffering from radiation sickness.

As they work toward that objective, students will:

1. Identify the signs of radiation sickness.
2. Describe ways to care for someone who is suffering from radiation sickness.
3. Explain ways they can protect themselves from radiation in the event of a possible nuclear explosion.

Summaries of the ten chapters are as follows:

Chapter One: Where To Begin

WHAT'S THE PROBLEM? when disaster strikes, it's too late to learn how to care for the injured people. Casualty care must be learned before you need to use it.

WHAT IS THIS? The purpose of *Your Chance to Help* is to introduce you to the prevention and care of casualties in disasters.

WHO NEEDS IT? Disasters can happen to anyone. Sometimes hours pass before qualified medical help arrives at the scene of a disaster. We all need to be prepared.

WHAT CAN YOU DO? First aid training is invaluable. If you've never enrolled in a first aid course, do so. If you've had a first aid course, refresh your knowledge and practice your skills from time to time.

SO LET'S BEGIN. Any disaster seems unreal no matter how hard you try to comprehend it. When you have to handle the emergency care of an injured person: 1) accept the situation; 2) have confidence; 3) get medical help quickly; 4) stay calm; 5) observe carefully; 6) think how the victim feels; 7) help the victim relax; 8) don't alarm the victim; 9) don't play expert; 10) do only what you must.

ONE MORE TIME. The ten general ways to handle the emergency care of an injured person are reviewed.

GETTING IT TOGETHER. Multiple-choice questions test student recall of basic casualty care procedures.

Chapter Two: Shock

WHAT'S THE PROBLEM? Whenever someone is seriously injured, such basic functions as breathing and blood circulation are impaired. This dangerous body state is called shock.

HERE'S WHAT HAPPENED. After an earthquake, Roberto Diaz and Bill Rogers

discover that a heavy bookcase has fallen on Roberto's younger brother Carlos. Having taken a first aid course, Roberto realizes that his brother is in shock and, while waiting for an ambulance to arrive, follows certain basic steps to prevent his brother's condition from becoming worse.

WHAT'S IN THE STORY? Short-answer questions check student recall of those casualty care procedures for shock given in the story.

WHAT ARE THE FACTS? Shock can cause death. Some signs of shock are: pale, cool, moist skin; shallow, irregular breathing; fast-beating heart; and general weakness, sickness, or confusion. Since the signs of shock are not always readily apparent, one should always assume that a seriously injured person is in shock.

WHAT CAN YOU DO? To care for someone in shock: 1) have the person lie down and stay quiet; 2) make the person comfortable; 3) make sure the person is in no further danger; 4) get medical help as quickly as possible; 5) stay with the victim until medical help arrives; 6) don't describe the injuries or do anything else to upset the victim. In additon, given specific conditions, there are four ways to position a victim.

IF HELP IS DELAYED. In certain cases--an hour after the injury has occurred--the victim can be given small doses of a special mixture of baking soda, salt, and lukewarm water.

GETTING IT TOGETHER. Multiple-choice questions check student recall of casualty care procedures for shock.

Chapter Three: Severe Bleeding

WHAT'S THE PROBLEM? If a large vein or artery is cut, a person can bleed to death in one minute or less.. Like breathing failure and poisoning, bleeding emergencies require immediate care.

HERE'S WHAT HAPPENED. During a hurricane, the glass from a crashing picture severely cuts Gramma's arm. Pam works quickly to stop the bleeding and move the old woman out of danger. With the help of Mr. Williams, a neighbor, the wound is temporarily bandaged and the victim is treated for shock. Pam stays with Gramma while Mr. Williams gets medical help.

WHAT'S IN THE STORY? Short-answer questions check student recall of those casualty care procedures for severe bleeding given in the story.

WHAT ARE THE FACTS? Severe bleeding can be recognized by the way the blood is lost. Gushing blood means that a major vein has been cut. Spurting blood

means that an artery has been cut. Both cases are serious and require immediate care. This involves stopping the bleeding, securing medical help, and treating the victim for shock until medical help arrives. (It may also be necessary to move the victim to a safe place.) Tourniquets should not be used to stop bleeding unless you know exactly how and when to use them.

WHAT CAN YOU DO? To care for someone who is severely bleeding, apply direct pressure to the wound while elevating the wounded part of the body. If bleeding continues, try to locate and use pressure points. Cover the wound with a clean dressing and hold the dressing in place with a bandage. Wrap and tie the bandage carefully.

GETTING IT TOGETHER. Multiple-choice questions check student recall of casualty care procedures for severe bleeding.

Chapter Four: Breathing Failure

WHAT'S THE PROBLEM? Within three minutes, lack of oxygen can cause brain damage. Within four to six minutes, it can cause death. Like severe bleeding and poisoning, breathing failure requires immediate care.

HERE'S WHAT HAPPENED. Andy, Jean, and JoAnna are caught in a flash flood while hiking through a desert canyon. Andy falls, hits his head on a rock, and ends up unconscious in the water. After fishing him out, JoAnna gives him mouth-to-mouth resuscitation. Once he has begun to breathe again, she and Jean treat him for shock while two other hikers get medical help.

WHAT'S IN THE STORY? Short-answer questions check student recall of those casualty care procedures for breathing failure given in the story.

WHAT ARE THE FACTS? Situations in which breathing failure can occur include: drowning, heart attack, choking, electric shock, gas or drug poisoning, a sharp blow on the head, and post-injury shock. In every case, breathing failure must be cared for immediately.

WHAT CAN YOU DO? Mouth-to-mouth resuscitation, which blows air directly into the victim's lungs, is the most efficient artificial respiration method. Learning the steps of this method requires practice under the supervision of an instructor. The steps are: 1) clear the airway; 2) tilt the head back; 3) pinch the nose; 4) seal your mouth over the victim's mouth and blow hard into it; 5) listen, watch the chest fall, and breathe in; 6) if no results, roll the victim on one side, and thump the victim's back sharply. In all cases, repeat the first five steps until the victim is breathing. Afterwards, remember

to treat the victim for shock. Get medical help immediately.

GETTING IT TOGETHER. Multiple-choice questions check student recall of casualty care procedures for breathing failure.

Chapter Five: Fractures

WHAT'S THE PROBLEM? Broken bones or fractures are a common injury in disasters. Since the signs of a bone injury aren't always apparent, every suspected fracture should be treated as if it were a real one. This means that the fracture must be immobilized.

HERE'S WHAT HAPPENED. Jon and Mark are playing in the loft of an old farm shed when Patti comes to warn them that a tornado is predicted. As they rush to the basement, the tornado strikes. Jon is throuwn down the ladder and breaks his leg. Mark and Patti immobilize the injury by preparing a splint with boards and strips of cloth. They treat Jon for shock while waiting for medical help to arrive.

WHAT'S IN THE STORY? Short-answer questions check student recall of those casualty care procedures for fractures given in the story.

WHAT ARE THE FACTS? A break in a bone is called a fracture. In an open fracture, the skin is broken. In a closed fracture, the skin is not broken. Open fractures are more serious because they can become infected. Although there are certain visible signs of bone injuries--for example, swelling, discoloration, or obvious deformity--it is often hard to tell when a bone has been broken. It is a good idea to assume that a bone is broken especially if the victim reports certain things--for example, feeling or hearing the bone snap when the injury occurred.

WHAT CAN YOU DO? To care for someone who has a fracture: 1) keep the victim from moving; 2) find out if the victim can report any signs of fractures; 3) treat any wound; 4) immobilize the injury and the joints above and below it with a splint; 5) treat for shock.

GETTING IT TOGETHER. Multiple-choice questions check student recall of casualty care procedures for fractures.

Chapter Six: Cold Weather Emergencies

WHAT'S THE PROBLEM? Cold weather can cause frostbite and hypothermia (commonly called exposure). Both of these conditions require emergency care.

HERE'S WHAT HAPPENED. A group of five teenagers hiking through the mountains are caught in a blizzard. While they head back for camp, Nancy falls into a stream and, as a result, develops hypothermia. The other four show signs of frostbite. The group is saved by Mr. and Mrs. Kirby who give them shelter in their cabin. While Mrs. Kirby stays with the hypothermia and frostbite victims, Mr. Kirby gets medical help.

WHAT'S IN THE STORY? Short-answer questions check student recall of those casualty care procedures for cold weather emergencies given in the story.

WHAT ARE THE FACTS? Hypothermia happens when the internal body temperature is seriously lowered and the body cannot return to normal on its own. Hypothermia can occur in temperatures as high as 50 degrees, for example, when the victim has gotten wet. Symptoms are: violent shivering; mumbling, forgetting things, or not making sense; feeling drowsy; being unaware of what's going on. Frostbite is caused by crystals forming in the fluids and tissues of the skin. The most commonly affected parts of the body are the toes, fingers, cheeks, and nose. Signs of frostbite are: flushed skin followed by pale, glossy skin; pain followed by severe numbness; blisters.

WHAT CAN YOU DO? To prevent cold weather emergencies: pay attention to weather forecasts; dress warmly in wool clothing; choose waterproof outer clothing; don't go out alone; carry high-energy food and snack often; limit your time outside. If hypothermia does occur: get out of the cold; take off all wet clothing; get warm as quickly as possible; take warm drinks; treat for frostbite; get medical help. If frostbite occurs: get warm as quickly as possible, but do not rub the affected part; elevate the affected part; exercise the affected part gently; don't break blisters; get medical help.

GETTING IT TOGETHER. Multiple-choice questions check student recall of casualty care procedures for cold weather emergencies.

Chapter Seven: Hot Weather Emergencies

WHAT'S THE PROBLEM? Hot weather can cause heat stroke, heat exhaustion, and heat cramps. All three conditions require emergency care.

HERE'S WHAT HAPPENED. The five teenagers from the previous story meet with Mr. George, their outdoor living teacher, to plan another hike. After their snowstorm experience, they realize the importance of studying survival rules and review ways to care for heat stroke, heat exhaustion, and heat cramps.

WHAT'S IN THE STORY? Short-answer questions check student recall of those casualty care procedures for hot weather emergencies given in the story.

WHAT ARE THE FACTS? Of the three hot weather emergencies discussed in the story, heat stroke is the most serious. It is most likely to occur among those who are in some way weaker than normal—for example, the elderly. Symptoms are: high body temperature; fast pulse; hot, red, dry skin; unconsciousness. Heat exhaustion and heat cramps are both caused by a loss of body salt. The symptoms of heat exhaustion are: pale, moist, cool skin; weakness, headache; dizziness, nausea; cramps and vomiting. The symptoms of heat cramps are muscular pains and spasms usually occuring first in the legs and stomach.

WHAT CAN YOU DO? To care for someone who has heat stroke, try to lower the body temperature as quickly as possible. Do this, for example, by giving the victim a cold bath or by applying cold packs. To treat heat exhaustion and heat cramps, help the victim replace the salt that has been lost by the body. For heat exhaustion: give the victim sips of salt water; have the victim lie down and elevate feet; loosen the victim's clothing; apply cool, wet cloths and fan victim; do not continue giving fluids if victim vomits; advise the victim to rest. For heat cramps: put firm, gentle pressure on the cramped muscles or massage them; give the victim sips of salt water.

GETTING IT TOGETHER. Multiple-choice questions check student recall of casualty care procedures for hot weather emergencies.

Chapter Eight: Burns

WHAT'S THE PROBLEM? Burns are classified as first, second, or third degree according to the amount of damage done to the skin and the tissue beneath it. Third degree burns usually require hospitalization.

HERE'S WHAT HAPPENED. The smell of smoke awakens Sadie and her younger sister Madelyn one night while their parents are out. They soon discover that there is a forest fire on an island near their summer cabin. Looking through binoculars, Sadie sees that Mr. Riley, who lives on the island, is in trouble. While Madelyn runs off to get help, Sadie rows out to the island with a first aid kit. She dresses and bandages Mr. Riley's burned arms and one shoulder and treats him for shock while waiting for help to arrive.

WHAT'S IN THE STORY? Short-answer questions check student recall of those casualty care procedures for burns given in the story.

WHAT ARE THE FACTS? A first degree burn, the least serious, causes reddening of the skin and will usually heal itself. A second degree burn damages the tissue under the skin, often causes blisters, and requires medical help. A third degree burn may char or burn away skin and requires medical care and, in many cases, surgery. An adult who has suffered burns on more than fifteen per cent of the body surface (ten per cent for a child) needs to be hospitalized. As with all other serious injuries, burn victims should also be treated for shock.

WHAT CAN YOU DO? To care for any burn: keep the surface clean; make sure that compresses, dressings, and your hands are clean; prevent infection by covering the dressing with clean plastic; treat the victim for shock. For first degree burns: lessen the pain and tissue damage by cooling the burned area--for example, soaking in cold water--or use an antiseptic ointment (not butter). For second and third degree burns: get medical help as soon as possible; try not to break blisters; do not use an antiseptic ointment; if medical help is not immediately available, remove clothing from around the burned area unless clothing sticks to the burn; soak the burned area in cold water (see exception below); dress and bandage the burn. Exception: for third degree burns, do not apply cold water if a large part of the body is burned. When in doubt about what to do, handle the burn as little as possible. Make sure the victim has been treated for shock.

GETTING IT TOGETHER. Multiple-choice questions check student recall of casualty care procedures for burns.

Chapter Nine: Emergency Transportation

WHAT'S THE PROBLEM? As a general rule, injured people should not be moved until they receive proper emergency care. They must be moved, however, if their lives are endangered by staying where they are.

HERE'S WHAT HAPPENED. Jeff has a summer job in an oil refinery. One day there is an explosion during which Mr. Walenski, the foreman, suffers a broken leg. The injured man warns the others that he should not be moved until he receives emergency care. Since the first explosion has started a fire and since the danger of a second explosion is imminent, however, Jeff convinces him that he must be moved. Using a tarpaulin, Jeff and the others move Mr. Walenski outside to a safe place.

WHAT'S IN THE STORY? Short-answer questions check student recall of those casualty care procedures for emergency transportation given in the story.

WHAT ARE THE FACTS? Situations in which a seriously-injured person must be moved include: the threat of fire or explosion; exposure to poisonous gas; danger of drowning; the threat of walls or buildings collapsing. If an injured person has to be moved but not instantly, give the person emergency care first—for example, stop serious bleeding, make sure breathing is normal, splint broken bones.

WHAT CAN YOU DO? To move an injured person with a blanket or similar item: 1) fold the cloth into pleats; 2) place the cloth as close to the victim's body as possible; 3) roll the victim on his or her side facing away from the cloth; 4) push the cloth up against the victim's body and then let the victim lie back again; 5) unfold the cloth and wrap it around the victim; 6) lift the cloth by its upper corners and drag it along until you reach a safe place. If a cloth is not available, move the injured person by the upper or lower part of the body as long as that part is not injured. If there are no broken bones, carry the victim. If there are no leg injuries and the victim is conscious, help him or her to walk. If you have a helper, use a chair to carry the victim.

GETTING IT GOETHER. Multiple-choice questions check student recall of casualty care procedures for emergency transportation.

Chapter Ten: Radiation Sickness

WHAT'S THE PROBLEM? Radiation sickness occurs when someone has been exposed to radioactivity as the result of either a nuclear bomb explosion or a serious accident in an atomic power plant. Neither of these disasters has ever occured in the United States.

HERE'S WHAT HAPPENED. Joe Olivero is awakened late one night by his father and by a warning attack signal outside. Joe, his brother, and parents arrive at the community fallout shelter in a nearby YMCA moments before a nuclear bomb is dropped on a city fifteen miles away. People coming into the shelter after the blast follow instructions to avoid contaminating the shelter with radioactive dust. Joe and his brother help Civil Defense workers care for those suffering from radiation sickness.

WHAT'S IN THE STORY? Short-answer questions check student recall of those casualty care procedures for radiation sickness given in the story.

WHAT ARE THE FACTS? Radiation sickness is caused by invisible radioactive rays that come from dust created by a nuclear blast. This dust is carried

by wind to places far from the blast site. The first signs of radiation sickness are headache, nausea and vomiting, and collapsing or fainting.

WHAT CAN YOU DO? The first 48 hours after a nuclear blast are the most dangerous. Get to a shelter and stay there. If you can't get to a shelter, going in the opposite direction may help. The heavier the shelter, the more protected you'll be. If you have been exposed to radioactivity: 1) get to a shelter as quickly as possible; 2) remove clothing; 3) shower or sponge off, if possible; 4) if helping others, wear disposable gloves and clothing; 5) take and/or give medication for radiation sickness; 6) treat for serious injuries.

GETTING IT TOGETHER. Multiple-choice questions check student recall of casualty care procedures for radiation sickness.

There are a total of 85 pen-and-ink illustrations in the student manual. The sketches in Your Chance to Help are serious in nature and do not attempt to be humorous due to the more serious content. The cover specifications call for the same four colors as those used for the cover of Your Chance to Live.

Each of the ten chapters contains two major sketches which illustrate the story section of the chapter. One of these two sketches shows the disaster situation at the time the injury is occurring. The second sketch shows the teen-ager in the story applying the correct casualty care procedure to the victim.

Additional illustrations in each chapter show visually the specific steps in a given casualty care procedure. Although some consideration was given to spacing of sketches, the primary guidelines for the inclusion of a given sketch at a given point was its value in terms of visual representation of a specific step described in the text. Sketches were checked with the Red Cross for validity of the position and procedure illustrated. Extensive revisions of several sketches were done by an in-house artist to achieve standards of excellence held by FWL as well as by DCPA and Red Cross.

Final revisions of sketches in the student manual involved redoing nine sketches in order to improve the representation of black people and other minorities. Revisions were done with the consultation of Ms. Francine Lewis, a black woman who has prepared guidelines for selecting book illustrations from a black perspective for young children. Revision focused on the following areas:

> Showing characters (black and other minorities) with varing skin hues (from dark to light complexions), a range of hair textures and hair styles, with variations in lip, eye, and

nose formations and body builds.

Showing minorities with facial features and body postures which are alive and demonstrate expressions compatible with the situations.

Showing minorities who do not appear to be all alike, with unidentifiable characteristics or individuality.

Showing all skin hues in an artistic manner which looks natural.

The cover design was developed to coordinate with the cover of Your Chance to Live, while presenting a more specific indication of the content of the manual.

Aspect of the two covers which coordinate include:

- the use of an eagle as a part of the design,
- a banner with the title of the manual displayed on it,
- the use of the same cover, with minor alterations, for the teacher's manual, and
- use of the same four colors -- blue, red, yellow and black.

Additions or changes on the casualty care manual cover include:

- a shield design to symbolize protection as well as to suggest that the publication is official, and
- the inclusion of a sketch done in the style found within the book, and which summarizes the spirit and attitudes expressed in the total project (that of a young person assisting an injured person in time of disaster.)

Throughout the student manual, attention has been paid to having a balance between male and female "helpers" and "victims" so that students are aware that injuries can occur to anyone, and that females are as capable as males in caring for those injuries. It is hoped that this guideline will aid young women in improving their own self-image and confidence in their ability to handle emergency situations, and will also give young men the reassurance that they need not be expected to carry the burden of handling an emergency alone. While these assumptions might seem to be obvious, it takes only a cursury appraisal of many publications today to see that they are not always expressed.

Also, special consideration has been paid to representing ethnic groups as they are represented nationally. (Since the student manual will be

distributed throughout the United States, all areas of the nation must be considered.) In this regard, the style of sketches posed some difficulty; they are not sufficiently refined to present ethnic differences in great detail. Within this constraint, attention was paid to depicting black people accurately and to including people of varying skin hues and facial features.

In addition to the depiction of ethnic groups in the sketches themselves, consideration was given to choosing ethnically distinct names (such as Ramon and Carlos) for characters in the stories.

Also in consideration of the geographic distribution of the materials, stories were set in various areas of the country, or were set in general types of geographic locations so that students in that kind of geography could identify with the area. Following is a list of that division, along with the specific chapter title as it finally appears in the student manual, and the type of disaster in which the injury occurs (chapter one has no specific story, but mentions three possible situations.)

LESSON	DISASTER	LOCATION
• WHERE TO BEGIN	(1) Burn/Industrial Accident	Urban area
	(2) Severe Bleeding/ Earthquake	San Francisco
	(3) Breathing Failure/ Flash Flood	Desert in western United State
• SHOCK	Earthquake	Southern California
• SEVERE BLEEDING	Hurricane	Florida
• BREATHING FAILURE	Flash Flood	Colorado River
• FRACTURES	Tornado	Rural area (probably midwest)
• COLD WEATHER EMERGENCY	Snow Storm	Mountain area
• HOT WEATHER EMERGENCY	Heat Wave	Mountain area
• BURNS	Forest Fire	Vacation area (lake & trees)
• EMERGENCY TRANSPORATION	Industrial Explosion	Urban area
• RADIATION SICKNESS	Nuclear Attack	Urban area

To present variety in the stories, the point of view was varied. For example in Chapter Two, "Shock," the story was told from the third-person point of view; that is, the story-teller was not involved in the events of the story, but was viewing it from outside the action. The third-person point of view was used for four of the ten chapters. Five of the stories were told from the first-person point of view; that is, the person telling the story was also involved in the action of the story him- or herself. (Chapter One has no story.)

The chapters which are told from the third-person point of view are:

Shock
Severe Bleeding
Emergency Transportation
Radiation Sickness

The chapters told from the first-person point of view are:

Breathing Failure
Fractures
Cold Weather Emergencies
Hot Weather Emergencies
Burns

In cases where the first-person point of view is used, the person telling the story is also the person affecting the rescue or giving the emergency treatment. In one story "Fractures" that person is also the one who is injured. This is done to illustrate that one value of knowing casualty care procedures is that, even in situations where you might be injured yourself, you can still give someone else instructions for correctly carrying out the steps necessary to care for your injury and protect you from further injury.

In one story "Severe Bleeding" the main character knows that they should take more protective measures against the hurricane, but does not feel confident enough to make the point to her Grandmother. This was included to show young people that they may find themselves in a situation where an adult may overrule them. Hopefully, they would also see (as Grandmother later does) that they may be wise to insist if they are sure the protective measures are necessary.

In "Cold Weather Emergencies", and "Breathing Failure" the point is made that nature is not always predictable and that if you are going into country with which you are unfamiliar, you would be wise to learn all you can about it

in advance. Other examples of "mini-lessons" implicit in the situations of the various stories are as follows:

Burns - need for communication system even in retreat situations.

Emergency Transportation - older man scornful of teen-agers ability to know what to do in an emergency; changes to respect as teenagers demonstrate their ability to handle an emergency.

Radiation Sickness - not only adults who can assist in emergencies; teen-agers can offer their assistance also.

To add variety to the manual, the opening style of the stories was varied. Following is a list of opening lines of each story:

LESSON	OPENER
II. SHOCK.....	It was a peaceful Friday afternoon in a small Southern California town. School was over for the day and Roberto Diaz had brought his friend Bill Rogers home with him. The two boys were in the kitchen raiding the refrigerator. In the dining room, Roberto's younger brother Carlos was already eating a snack. He was the only other person in the house.
III. SEVERE BLEEDING.....	When they first heard the warnings on the TV news Pam felt a little shiver of fear go all through her. She knew about hurricanes, of course, mainly from her mother who had grown up here in Florida. But Pam had always lived in Chicago, and even when she had visited Gramma in the summer--like now--she had never been in one.
IV. BREATHING FAILURE.....	When the first drops of rain began to fall, we threw our backpacks beside a rock, and headed for a small cave above the trail. We would wait out the shower, we decided, before continuing our seven-mile hike down narrow Supai Canyon on the Colorado River. We were heading for a campground just beyond the Havasupai Indian Village at the bottom of the canyon.
V. FRACTURES.....	It started out like any other Saturday. My friend Mark, and I were out working on our clubhouse. It's in the loft of an old run-down shed on my Aunt's and Uncle's farm. I live in town, but I spend a lot of time there.

VI. COLD WEATHER EMG..... We must have made quite a picture -- the four of us wrapped in blankets and sleeping bags with our feet in pans of warm water. We were either sitting very carefully on our hands or had them tucked under our armpits.

VII. HOT WEATHER EMG..... Several weeks after our snowstorm-in-June experience, the five of us--Nancy, Jennifer, Mike, Randy and I--got together at Mr. George's house. We wanted to tell him about our adventure, and plan another hike, if he was willing to sponsor us. We also wondered if he would recommend school approval for our club. He cleared that up right away.

VIII. BURNS..... It was the hottest summer I could remember. I was really gald when our family left the city and went up to the lake at the beginning of August. It wasn't very far from the city, but I thought it would be cooler up there. Boy, did I get a surprise! You've heard of going "out of the frying pan into the fire?" Well, that's just where we went!

IX. EMERGENCY TRANSPORTATION..... Some of the guys in Jeff's high school had teased him about "spending the summer shoveling dirt." But as far as Jeff was concerned, the laugh was on them.

X. RADIATION SICKNESS..... On the night that was to change his life, Joe Olivero did not sleep very soundly. In fact, he hadn't expected to be able to sleep at all. Like the rest of his family, he was too worried to sleep. The radio had been on all day. And nobody had talked about anything except whether or not war was going to come--and what might happen if it did.

The Teacher's Manual

The teacher's manual is 129 pages long, and is divided into ten chapters corresponding to the ten chapters in the student manual. Chapter title pages coordinate with the student manual in type style and layout.

The teacher's manual provides an introduction which include the following sections:

- Rationale. A brief discussion states why the study of casualty care procedures is important.
- Purpose. The origin and purpose of the Your Chance To Help materials is explained.

- Using this Program in Your Classroom. Some general suggestions are given to assist the teacher in presenting the program, including a caution about the danger of casualty care misinformation.

- A Student Questionnaire. Six questions which might be asked students before the study begins are given. These questions help the teacher determine student experience and attitudes toward casualty care. It is suggested that a similar questionnaire could be administered at the end of the program to determine what changes, if any, have occurred in student attitudes.

- The Student Manual. A summary of the student manual is presented to give the teacher an overview of the student program.

- This Teacher's Manual. A summary of what is included in the teacher's manual is presented.

- Finding Your Own Additional Resources. Guidelines are given for the teacher to find additional resources in three major areas: books, magazines, and films and television.

In addition to these introductory sections, an extensive list of additional resources is located in the back of the teacher's manual. This section is divided into three sub-sections:

Causes of Disasters
People in Disasters
First Aid and Survival.

For each of the ten chapters in the student manual, the teacher's manual offers the following categories of information:

- Objectives. One long-range and three short-term behavioral objectives indicate what the students should be able to do after studying the chapter.

- Summary. For the convenience of the teacher, each part of the chapter is briefly described.

- Introducing the Chapter in Class. Suggestions are provided for stimulating student interest in the material and for relating content to prior student experiences.

- Related Activities. Suggestions are provided for reinforcing what the students have learned and for extending the lesson. Each suggested activity is labeled with the most appropriate class in which to use it--for example, social science or career education--and the most appropriate way to organize students for it--for example, in small groups. A teacher might choose to use all, some, or none of these activities with a particular class.

- What's In the Story: Sample Answers: After each story, students are asked to answer a series of essay questions about what they have read. Copies of these questions and sample answers for them are provided here. The answers are taken from the italic type in the story itself, and are not meant to be all-inclusive at this point in the chapter.

- Getting It Together: Discussion Guide. At the end of each chapter, students are asked to try a multiple choice quiz about the chapter. A copy of these questions, the correct ansers, and an explanation of the correct answers are provided here.

- Suggested Essay Questions. In addition to, or instead of, the multiple choice quiz at the end of the chapter, the teacher may wish to use essay questions to teast student comprehension. Suggested questions and sample answers for them are provided here.

The teacher's manual is organized in such a way that specific pages can be duplicated and distributed to the students for their use. Possible instances where such duplication might prove useful include giving students sets of the chapter objectives and summaries or of the various answer sections ("What's In the Story: Sample Answers," "Getting It Together: Discussion Guide," and "Essay Questions").

Permission is granted on the copyright pages of both the student and teacher manuals for teachers to reproduce portions of the materials as needed for use in classroom situations.

The teacher's manual is designed to fulfill contract specifications to develop an "instructor's guide keyed to the student manual that will allow teachers with little experience in the content area to coordinate learning experiences."

SECTION VI: RECOMMENDATIONS

Consideration of a Curriculum Delivery System

For the purpose of this discussion we define curriculum as a set of educational resources that--in a given content area--have defined and have available the means and methods of instruction and learning.

A curriculum delivery system is an organized arrangement of people and materials that deliver a given curriculum to users, and develop institutional and personnel capability in implementing and maintaining the curriculum.

Curricula, developed in a well established (traditional) subject matter area (such as the 3-R'S, science, history, etc.) are usually adopted/used based on their own merit and as a rule may not need the kind of delivery system as indicated above.

In case the curriculum content area is non-traditional or non-conventional, such as in the case of Your Chance To Help, the availability of a curriculum delivery system--as a rule--is essential.

The main components (or subsystems) of a curriculum delivery system will include the following:

- a Dissemination/Diffusion Program;
- Teacher Orientation/Training Program;
- Institutional Adoption/Adaptation Manual
- Evaluation Manual;
- a Program Description Summary; and
- a Guide for the Management of the Delivery System.

The curriculum project as completed did not address the design/development of a Delivery System. The design of such a system should proceed only if the curriculum was developed and was found to be viable. It is proposed, therefore, that consideration be given to the design and development of a Delivery System for the Your Chance To Help curriculum.

The first two components presented above are now discussed in more detail.

Dissemination/Diffusion Program

Direct mail, intermediary, piggybacking, and media strategies are four major dissemination/delivery categories. It would be useful to conduct further study of distribution systems relevant to Your Chance to Help, employing an experimental approach whereby areas of the nation are randomly assigned to

delivery "treatments" which involve carefully specified expenses and benefits. An effective field experiment can lay a strong foundation for policy formulation by testing policy innovations in the real world and controlling statistically for alternative explanations and outside interferences.

We know much about the advantages and disadvantages of alternative delivery mechanisms. Shotgun mailing is easy and cheap but it scatters impact and may be wasteful. Use of an intermediary offers the benefits of direct personal interaction, but it requires considerable training and careful selection of personnel to avoid possible backfire. Piggybacking allows financial savings, but provides less control over the product and risks the possibility of a reverse halo effect. Use of media as a dissemination vehicle also merits further study, since different forms have noticeably different effects. A transportable vehicle can ensure personal contact and can be highly effective, but it is also expensive, considering its limited outreach. Motivational films can also produce results, but they must be followed up with materials which direct desired action.

We need to use our knowledge of these and other strategies to develop alternative treatments which can be rigorously compared for cost and effect. In addition, we should compare them with regard to impact in times of varying stresses, usefulness in staff college training and effectiveness in different situations, e.g., mandated vs non-mandated instruction or training. In every comparison, the essential question is: what is the best strategy for a given situation and a given level of expenditure?

Teacher Orientation/Training Program

Although the materials were designed specifically so that they could be used by teachers who have little or no training in casualty care, it seems obvious that such training would prove to be an advantage. In addition to improving the presentation of the materials, teacher training would be an effective way to increase use of the manual. A consideration of the possible methods for providing such training and of the materials and other resources which might be necessary would be worthy of DCPA's attention.

One possibility might be a teacher training film designed to motivate casualty care instruction by pointing out potential benefits to students and exploring effective instructional strategies for teachers. The development of a brief instructor's course, with appropriate materials, might also be considered. It would seem advantageous to consult the National American Red

Cross regarding the possibility of their participation in such a teacher training component for these materials.

Operational Testing

A logical step that would follow the field testing program we have now concluded is the operational testing of the curriculum. Operational testing would be scoped to involve several regions and at least three sites per region, (rural, suburban, urban). Operational testing would provide opportunity for:

- the assessment of the usefulness of the materials in a variety of formal and informal educational settings,
- the testing of the curriculum in various regions of the country,
- the infusion of the curriculum into various subject matter contexts, and
- trying out various time frames of utilization and sequencing.

The information gained from operational testing would allow:

- an empirically based design of curriculum delivery systems,
- the final revision of materials, and
- and an extended basis for making judgment about the adequacy and usefulness of the curriculum.

Operational testing could be accomplished in the time frame of one year.

National Diffusion and Assessment

The two final steps in the development-diffusion program involve the national diffusion of the curriculum and the assessment of its impact. Diffusion would be carried out as the delivery system designed earlier would be implemented. A national assessment would then follow about a year later.

Revision and Further Development

It should be noted that Your Chance to Help was not developed under the Laboratory's normally rigorous procedures of research and development, due to constraints of time, budget, and pressing need. The manual itself represents a good start; its value and efficacy is demonstrated by field test results. However, it might be noted that, given the extensive distribution plans for the manual, a revised product might be in order. Revision might include the

following;

- Sketches reproduced in more detail and with an attempt to present a more realistic approach. Use of a "wash" technique might be considered.

- The print in the book, currently in typewriter type, might be reset in type face for a more polished impression.

- The student manual might be presented in binder form so that students can take notes and remove or add materials as the need arises. Pocket pages might be included so that clippings, etc. can be added.

- The teachers' manual could be similarly revised in format. It could be placed in binder form with the print only on the right page. The left page could then be used for a daily log and special planning. Pocket pages would also be valuable for the teacher's clippings and additional notes. A special page might be included for the teacher to note the best activity or activities. To provide for easy feedback to FWL-DCPA from the teacher, an addressed mail-back page could be included.

- An alternative format recommendation would call for packaging the student materials as ten individual units. (Considerable student support for small unit packages of this sort was in evidence throughout the pilot and field test phase of this project). Such packaging would encourage the use of the chapters as individualized learning units.

Additionally, new materials should be considered. These materials would proceed in accordance with FWL's carefully designed and tested research and development cycle of prototype development, testing, revision, further testing, and final product development to ensure a predictable and successful outcome.

The first area of concern for further development is grade level or target audience for DCPA educational materials. Field test results show that the manual in general succeeds in reaching its target audience of junior and senior high school students. However, there is evidence indicating a remaining need to include elementary grades in the overall target population. (Informal use of these materials at the intermediate level indicate that they could be adapted to that age group without substantive changes.) Schools and districts are not systematic or consistent in their assignment of disaster preparedness instruction to junior and senior high grades. Teachers who must integrate

casualty care content into lower grade levels will undoubtedly continue to request more appropriate materials for their classrooms.

There are several alternatives to be examined by DCPA in response to this problem. One is to develop an additonal version of a student manual for elementary students. A second is to focus on junior high students in terms of basic text material and reading ability level, but to additionally develop and provide a package of resource materials for elementary teachers and students, including resource lists, a collection of existing and/or newly developed student materials with an individualized learning orientation, and lesson or unit guides for teachers. Additional or alternative units might consist of descriptive and historical material on casualty care.

Supplementary materials which might be considered for development include the following:

- Media presentations, such as filmstrips, slide-tape presentations, movies, tapes, posters, etc.

- A series of tapes dramatizing the stories in the manual, as if they were part of a radio series. Sound effects and appropriate music could be included. The theme of the series would be stories submitted by teen-agers telling of incidents in which they were caught in disaster situations and responded in an exemplary manner. The radio series could be presented as a contest in which the "listeners" are to select the winner. Such a series of tapes would be especially useful in classes where students have reading difficulties and could benefit from the technique of "reading while listening to the content" which has proven so effective for students with reading disabilities.

- A detailed explanation for how to set up a mini-course in casualty care procedures which would facilitate students in multiracial schools in learning the practical knowledge they need to get along in an urban environment. Such a course would provide students from various ethnic backgrounds the opportunity to meet and interact while improving their self-esteem and confidence in their abilities.

- A detailed explanation for how to set up a course similar to the one above, but geared specifically toward young women. The emphasis would be upon improving young women's self-image with regard to their ability to handle emergencies and to be self-reliant.

Project Process Recommendations

In further projects involving the production of student and teacher materials, it would be wise to include specific contract provisions for the following:

- "One-on-one" testing of both student and teacher materials should be conducted early in the development process. This testing situation would select individual teachers and students from the target population who would evaluate the materials in individual sessions with the developer(s). Feedback from these individuals would be valuable in the development of the prototype materials.

- As a second step in the testing process, a pilot test should be scheduled at a point in the development process where the developmental results of the above feedback can be tested. It should not be scheduled so late in the development process, however, that pilot test results cannot be carefully evaluated and incorporated into the development of the final product.

- Consultants should be specifically designated to evaluate the materials for accurate multi-ethnic and non-sexist representation in both content and illustrations. This consultation should begin early in the development process and continue periodically throughout the project's duration.

- The basic budget for the actual production of the final products (for example, the student and teacher manuals themselves) should include provision for rapidly increasing costs for both materials (such as paper) and services (such as artist's fees and typesetting.) Emphasis should be placed on the development of materials of professional quality in packaging as well as in content. Today's educational consumer will not settle for less.